

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-V • EXAMINATION – WINTER 2013****Subject Code: 150401****Date: 27-11-2013****Subject Name: Advance Molecular Biology - I****Time: 10.30 am - 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What is mutation? Explain spontaneous and induced mutation with example. **07**  
(b) What are the different ways for suppression of mutation? **07**
- Q.2** (a) Explain the technique of Western Blotting with a neat diagram. **07**  
(b) Explain the mechanism of Base Excision Repair with a neat diagram. **07**
- OR**
- (b) Explain the mechanism of Nucleotide Excision Repair with a neat diagram. **07**
- Q.3** (a) Define the term Genetic engineering. State its applications **10**  
(b) Write a short note on different methods implemented for modifications of cut ends. **04**
- OR**
- Q.3** (a) Explain the process of transformation of foreign DNA into a suitable host cell. **07**  
(b) Explain trp operon. **07**
- Q.4** (a) Explain the model of lac operon with both negative and positive regulations. **10**  
(b) Write functions of endonuclease, exonuclease and phosphatase enzymes. **04**
- OR**
- Q.4** (a) What is palindromic sequence? Explain with a suitable example. **07**  
(b) Explain regulation of transcription in eukaryotes. **07**
- Q.5** (a) Explain mechanism of feedback control with a suitable example. **07**  
(b) Explain characteristics of lambda vector and its applications in genetic engg. **07**
- OR**
- Q.5** (a) What are ideal properties of a host? Which organisms can be used as host in genetic engineering? **07**  
(b) What is attenuation? Explain the mechanism of attenuation. **07**

\*\*\*\*\*